

REMARKS/ARGUMENTS

This communication responds to the Office Action of March 29, 2005. In this communication, Applicants have amended claims 1, 14, and 22, and canceled claim 2. No new matter is introduced. Claims 1, and 3-22 are pending. Applicants would like to take this opportunity to thank Examiner Tamai for granting a telephone interview on June 21, 2005 with Applicants' representative. Allowance of all pending claims is respectfully requested.

Oath/Declaration

The Office Action indicates that the oath or declaration is defective because the oath provides a residence address but does not identify the mailing address of each inventor. Applicants have included in this communication an application data sheet with the mailing address of each inventor. According to 37 CFR 1.63(c) and 37 CFR 1.76, the mailing address may be provided in an application data sheet.

Rejections Under 35 U.S.C. § 102

Claims 1-5, 7, 9, 14-17, 22 and 23 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Japanese Patent No. 07-274540 to Higuchi et al. (hereinafter "Higuchi") for reasons stated on page 3 of the Office Action. Applicants respectfully traverse the rejection.

For anticipation under 35 U.S.C. §102, the reference "must teach every aspect of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present." (MPEP §706.02, IV. Distinction between 35 U.S.C. 102 and 103, page 700-21). The Federal Circuit has held that prior art is anticipatory only if every element of the claimed invention is disclosed in a single item of prior art in the form literally defined in the claim (*Jamesbury Corp. v. Litton Indus. Products*, 756 F.2d 1556, 225 USPQ 253 (Fed. Cir. 1985); *Atlas Powder Co. v. Du Pout*; 750 F.2d 1569, 224 USPQ 409 (Fed. Cir. 1984); *American Hospital Suppl v. Travenol Labs*, 745 F.2d 1, 223 USPQ 577 (Fed. Cir. 1984).

Higuchi generally describes electrostatic actuators that contain electrodes formed at regular pitches on stators and rotors. The actuators are conventional layered-type actuators driven by three-phase-circuit AC voltages.

Contrary to Higuchi, claims 1, 14 and 22, as amended, recite voltage sources that impose **discrete voltage patterns** on electrodes. A person of ordinary skill in the art would recognize that the discrete voltage patterns allow precise control over the actuator, while it is very hard to control with great precision actuators driven by analog voltages, such as those described in Higuchi. Accordingly, Applicants respectfully submit that Higuchi does not anticipate independent claims 1, 14 and 22 because it does not teach every aspect of the claimed invention. Applicants further submit that claims 3-5, 7, 9, 15-17 and 23 are

patentable over Higuchi because they depend from claim 1, 14 or 22, and because they recite additional patentable subject matter. Withdrawal of the 35 U.S.C. §102(b) rejection to claims 1, 3-5, 7, 9, 14-17, 22 and 23 is respectfully requested. Claim 2 has been canceled and the rejection is now moot.

Rejections Under 35 U.S.C. § 103

Claim 6 stands rejected under 35 U.S.C. § 103(a) over Higuchi in view of U.S. Patent No. 5,869,916 to Suzuki et al. (hereinafter "Suzuki-916") for reasons stated on page 4 of the Office Action. Claims 8, 10-12, and 18-21 stand rejected under 35 U.S.C. § 103(a) over Higuchi in view of Japanese Patent No. 07-274540 to Suzuki et al. (hereinafter "Suzuki-540") for reasons stated on page 4 of the Office Action. Claims 13 and 24 stand rejected under 35 U.S.C. § 103(a) over Higuchi in view of U.S. Patent No. 5,986,381 to Hoen et al. (hereinafter "Hoen") for reasons stated on page 5 of the Office Action. Applicants respectfully traverse these rejections.

To establish a *prima facie* case of obviousness ... the prior art reference (or references when combined) must teach or suggest all of the claim limitations. *In re Vaeck*, 947 F.2d 488 (Fed. Cir. 1991) and *MPEP* § 2142. In order to combine references, the following tenets of patent law must be adhered to: (A) The claimed invention must be considered as a whole; (B) The references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination; (C) The references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention, and (D) Reasonable expectation of success is the standard with which obviousness is determined. *Hodosh v. Block Drug Co., Inc.*, 786 F.2d 1136, 1143 n.5 (Fed. Cir. 1986).

With respect to Claim 6, the Examiner alleges that Higuchi teaches every aspect of the invention except the intermediate voltage and that Suzuki-916 teaches an intermediate driving voltage to smooth the movement of the mover. Applicants respectfully disagree. As discussed earlier, Higuchi is directed to layered type electrostatic actuators driven by three-phase-circuit AC voltages. Suzuki-916 describes using intermediate voltage values to smooth the movement of the movable element 21 (see e.g., col. 8, lines 46-59). Since Higuchi already uses analog voltages that have a continuous voltage change, there would be no desirability and thus the obviousness to combine Higuchi with Suzuki-916 and switch from analog voltage to discontinuous voltages. In fact, such a combination would render Higuchi's invention inoperable since Higuchi is designed specifically to utilize conventional three-phase-circuit AC voltages (see e.g., paragraph 0003, "if the mechanism for reducing frictional force is not used for the conventional electrostatic actuator, it is difficult to operate

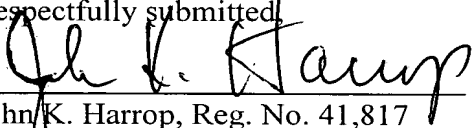
in practice"). Accordingly, Applicants respectfully submit that Higuchi and Suzuki-916, individually or in combination, does not render claim 6 obvious.

Similarly, claims 8, 10-13, 18-21, and 24 are all directed to stepping comb driving actuators. The cited secondary references (i.e., Suzuki-987 for claims 8, 10-12, 18-21, and Hoen for claims 13 and 24), however, describe only parallel plate actuators and fail to teach or suggest comb drive actuators. Moreover, a person of ordinary skill in the art would recognize that there would be no desirability to combine Suzuki-987 or Hoen with Higuchi, as suggested by the Examiner. For example, Suzuki-987 is cited for the teaching of connecting every other electrode to a conductor. Applying this connection pattern to Higuchi would render Higuchi's invention inoperable, since Higuchi is specifically designed to use three-phase-circuit AC voltages. Hoen is cited for teaching flexure suspension compliant in one direction and stiff in the direction orthogonal to travel. Such a suspension, which is commonly used for MEMS actuators, simply does not apply to the large, conventional layered-type actuators described by Higuchi. Accordingly, Applicants respectfully submit that the Examiner has not established any desirability and thus the obviousness of making the stated combination, and that Higuchi, Suzuki-987, and Hoen, individually or in combination, do not render claims 8, 10-13, 18-21, and 24 obvious.

In view of the foregoing remarks, favorable reconsideration of all pending claims is requested. Applicants respectfully submit that this application is in condition for allowance and request that a notice of allowance be issued. Should the Examiner believe that anything further is required to expedite the prosecution of this application or further clarify the issues, the Examiner is requested to contact Applicants' attorney at the telephone number listed below.

Dated: **June 27, 2005**

Respectfully submitted,


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Attachment: Application Data Sheet